



THE SOURCE



NEWSLETTER OF THE NHDES DRINKING WATER SOURCE PROTECTION PROGRAM
ON THE WEB AT WWW.DES.NH.GOV/DWSPP

WINTER 2007

Annual Program Highlights and Status Report

One of the broadest measures of the success of the Drinking Water Source Protection Program (DWSPP) is the percentage of community and non-transient, non-community (NTNC) water supply sources with local source water protection (SWP) programs in place. Our goal is 90 percent. At the end of September 2006, we could point to 85 percent of community sources and 71 percent of NTNC sources with local SWP programs. That's in addition to DES's statewide programs in areas such as underground storage tanks, hazardous waste, shoreland protection, and erosion and sedimentation control.

During the past year the program:

- Trained 115 water suppliers, local officials, regional planners, and consultants at our annual workshop.
- Ensured that all new sources for community systems have wellhead protection areas and SWP programs.
- Trained 23 municipal employees to conduct inspections and enforce best management practice regulations for handling and storing regulated substances.
- Worked directly with eight communities to develop local SWP programs.
- Completed a new guidance document to help water suppliers enforce DES's water supply watershed protection rules (see sidebar).
- Assisted Orford, Newfields, Lee, and Hopkinton in permanently protecting 455 acres of land within their municipal source water protection areas. DES expects to award over one million in the 2007 grant round.
- Awarded 19 Local SWP Grants totaling \$203,000.
- Initiated changes in the Local SWP Grant program to get regional planning commissions more involved in source water protection.

- Partnered with the OEP to gather geo-referenced data on local ordinances that contribute to SWP.

- Hired a staff person (see page 3) to ensure compliance with the water use registration and reporting rules, who will be responsible for maintaining data essential to state water resources planning and policymaking.

- Worked with legislative commissions and committees on a broad range of water management issues.

- Trained more than 100 educators in Project WET (Water Education for Teachers).

- Administered the requirements of large withdrawal permits and verified that no unmitigated adverse impacts occurred in 2006

- Developed procedures to address the management of wastewater and residuals from arsenic and radionuclide removal processes for water supply systems.

- Assessed the occurrence of perchlorate in groundwater and surface water statewide.

- Administered regulations for new community water supplies, water conservation, hazardous material handling and storage, and groundwater discharges.

- Coordinated with three communities on feasibility or pilot studies associated with innovative wastewater reuse and aquifer recharge projects.

- Coordinated with two communities on researching and studying the feasibility of aquifer recharge projects.

Watershed Rules Guidance Document

DWSPP has created a guidance document for local officials and water suppliers to use as support for enforcing Env-Ws 386 *Rules for Protecting the Purity of Regulated Watersheds*. Please visit www.des.nh.gov/dwspp/shedrule.htm to download the document, or contact Jessica Morton at (603) 271-4071 or jmorton@des.state.nh.us to receive a copy.

In the coming year, the program will conduct an analysis of gaps in the protection of riparian areas for surface water sources and involve stakeholders in revising the groundwater protection strategy. Please contact Paul Susca at (603) 271-7061 or psusca@des.state.nh.us with any comments.



Spotlight on ... Newmarket

Protecting the Newmarket Plains Aquifer



Land and development can affect both the quality and quantity of available groundwater. Many businesses and other activities involve storage, use, and handling of substances that can contaminate groundwater, and some activities are more likely than others to release those substances to the ground. In addition, land uses that involve large impervious areas (buildings, parking lots, and to some extent, lawns) can have a significant cumulative impact on the amount of runoff that actually recharges groundwater and supports wells, dry-weather stream flow, and other water resources.

Local land use regulations can protect groundwater quality by managing the location and design of potential sources of contamination. Such regulations can also help preserve groundwater availability by managing the layout and extent of impervious areas and the associated stormwater management systems.

Newmarket's Aquifer Protection District and Wellhead Protection Area ordinance provides excellent examples of common zoning provisions adopted to protect groundwater resources.

tion area and requires a build-out scenario for large developments as well as a hydrogeologic study completed by a professional hydrogeologist.

Other zoning and development rules add synergy to Newmarket's groundwater resource protection approach. For example, the town's open space developments must be designed to protect groundwater resources before they can be approved by the planning board. Other provisions in the town's site plan review and subdivision rules that address key groundwater recharge concerns include requirements to develop maintenance plans for stormwater management, install oil or water separators, and equalize pre- and post-development runoff (encouraging on-site infiltration).

To download a copy of Newmarket's zoning and development rules please visit www.newmarketnh.gov/town_departments/planning/index.htm, or for a copy of DES's *Model Groundwater Protection Ordinance* please visit www.des.nh.gov/dwspp. For more information on local ordinances and groundwater protection please contact Pierce Rigrod at (603) 271-0688 or prigrod@des.state.nh.us.

Ten Common Provisions of Local Groundwater Ordinances

- Reference to DES BMP for groundwater rules.
- Increased minimum lot size.
- Reduced density where septic systems are used.
- Limits on impervious area.
- Incentives for cluster, open space or low-impact development.
- High-risk land uses prohibited.
- Limit on quantity of hazardous materials on site.
- Performance standards.
- Conditional use permit required for some land uses.

The Aquifer Protection District, which covers stratified-drift aquifers, contains eight of the ten groundwater zoning protection provisions (see sidebar) identified as important by DES. These provisions include requiring compliance with Env-Ws 421, the state's best management practices rules for preventing groundwater pollution, encouraging open space development, banning a variety of high-risk land uses, and requiring environmental performance standards. The ordinance also bans new commercial excavation and underground storage tanks (USTs) containing petroleum products within the wellhead protec-

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New Staff for Water Conservation and Water Use Enforcement

Derek Bennett, formerly of the NH Geological Survey, was recently selected to oversee the Water Conservation and Water Use Registration and Reporting Enforcement programs. Derek completed his bachelor of science degree in 1999 through UNH with a focus in environmental conservation. Shortly thereafter, Derek accepted a position with DES where he spent two years with Water Management and five years as a hydrogeologist with the NH Geological Survey focusing on the GIS component of water resources management.

The Water Conservation program is a relatively new section within DWSPP. The rules for the program, Env-Ws 390, were formally adopted by DES in May of 2005 following RSA 485:61, which became law in July of 2002. The rules require applicants for new sources of water to take conservation measures by installing source and service meters, implementing water audits and leak detection, reducing unaccounted-for

water, adopting a rate structure that promotes conservation, and performing outreach on water conservation.

The Water User Registration and Reporting program has been in place since 1987, but was recently revamped with the passage of House Bill 215 during the 2005 session, which enacted RSA 488. Registration is required for anyone using more than 20,000 gallons of water per day averaged over any seven-day period, or exceeding 600,000 gallons in total volume over any 30-day period. In addition to registration, users are required to report monthly water use and include information on the type of use along with the locations of all withdrawals and discharges.

Derek is excited about his new role in DWSPP and eager to promote water conservation in New Hampshire. Derek can be reached at (603) 271-4087 or dbennett@des.state.nh.us.

Changes Eyed for Shoreland Protection under RSA 483-B

New Hampshire is again at a watershed moment in terms of protecting surface waters and adjoining shoreland areas. This November, the Commission to Review the Effectiveness of the Comprehensive Shoreland Protection Act (CSPA) delivered its final report, which includes findings and recommendations to address a wide range of issues related to the Act's implementation.

Twenty-seven water systems rely on sources that are designated "public waters" protected under the CSPA. In September, the DWSPP conducted a survey of those systems to gauge their views of the CSPA's effectiveness in protecting their water supply sources, particularly with respect to enforcement and public education. One in four water systems indicated that more assistance with enforcement is necessary, while one in three indicated that more public education is needed.

Respondents who felt enforcement was an issue often indicated that municipal enforcement staff (e.g. code enforcement) do not have time to enforce the CSPA. Currently, enforcing the CSPA involves documenting violations of the Act's requirement to leave a well distributed stand of trees and other vegetation. Specifically, the Act requires the prop-

erty owner to keep 50 percent of the basal area of trees within a 150 foot woodland buffer along protected public waters. Determining whether or when a woodland buffer violation occurs involves documenting when and where vegetation was removed. This requires knowledge of plants and may involve examining the property's tax card and reviewing plans or aerial photographs, as well as being familiar with the state's Shoreland Protection rules (Env-Wq 1400).

Survey respondents also indicated that more public education assistance is needed from the state, conservation commissions, or perhaps lake associations.

The Commission's report addresses both of these issues, recommending increased funding for outreach, education, and enforcement. The report also proposes a simpler approach to determining the amount of vegetation that must remain in the buffer zone.

The current legislature may act to adopt some or all of the Commission's recommendations. For more information on the CSPA or to download a copy of the report please visit www.des.nh.gov/cspa or contact the Shoreland Protection Outreach Coordinator at (603) 271-0862 or shoreland@des.state.nh.us.



The Art and Science of Protecting Water Supplies through Local Zoning

In order for a groundwater protection or other resource protection ordinance to be effective, it must clearly identify the area where it applies. There are two primary ways of doing this: including a narrative description or list of what is to be included in the district, and referencing a map. If possible, the ordinance should do both.

A recent DES-OEP study of groundwater protection and shoreland protection ordinances in New Hampshire revealed that most of the ordinances do an adequate job of defining the district, but many groundwater protection ordinances define the district boundary using ambiguous terms such as areas of “better or best potential for groundwater,” and typically don’t define those terms. For the sake of clarity, even the most common and simplest terms should be defined in the ordinance.

The study also found that many of the ordinances were adopted without a corresponding map, or refer to outdated maps. If your ordinance refers to a map within a publication or a specific map produced by a third party, make sure the map or study isn’t outdated or inconsistent with the current text of the ordinance. For example, if your local aquifer protection ordinance refers to the USGS “Cotton” maps only (completed in the 1970s or 1980s), updating the text with a more current reference should be a priority. Ideally, the ordinance should adopt an official map that shows the shoreland or groundwater protection district or it should include a reference to a current map, citing the name, date, and preparer of the map, and a textual description of what is intended to be included in the district. For example,

The district shall include all areas of stratified-drift aquifer with a minimum transmissivity of 1,000 ft² per day associated with aquifers shown on (map citation).

Finally, build in a process to allow the planning board to revise the mapped district boundaries on the basis of more recent or more accurate information. This is where the narrative description needs to provide clear guidance regarding what is supposed to be included in the district. More guidance on defining an aquifer district is available in Appendix H of DES’s *Model Groundwater Protection Ordinance*, which can be found at www.des.nh.gov/dwspp/pdf/ModelOrdinance.pdf.

DWSPP Award Nominations Due

DWSPP is seeking nominations for the annual Source Water Protection Award, for exemplary work in source water protection. The winner will be announced at DES’s Source Water Protection workshop in May. You can nominate someone by contacting Pierce Rigrod at (603) 271-0688 or prigrod@des.state.nh.us. Nominations are due by March 15, 2007.

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